

SYSTEMS, METHODS, AND COMPUTER PROGRAM PRODUCTS TO
INTEGRATE USER-DEFINED OPERATIONS INTO A DATABASE TRANSACTION

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ABSTRACT OF THE INVENTION

Systems, methods, and computer products that support techniques associated with highly reliable transaction protocol semantics in databases. Such techniques extend database transaction semantics that support a single-phase or a two-phase commit
10 protocol to include user-defined operations while supporting the XA X/Open® Distributed Transaction Processing Protocol ("XA Transaction Protocol"). The preferred embodiment of the present invention novelly enables user-defined operations that access external resources by means of the XA Transaction Protocol to be included in database transaction processing features. Thereby user-level access to well-defined APIs is
15 provided. Further, the preferred embodiment of the present invention novelly ensures atomicity for the results of the database transaction that includes both the user-defined operations and database operations. According to the preferred embodiment of the present invention the database acts, in part, as an XA transaction manager.

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